

M.Ed. –SEMESTER-II
Paper CC8: EDUCATIONAL TECHNOLOGY AND ICT

VANDANA
ASSISTANT PROFESSOR, DEPARTEMENT OF EDUCATION
N.A.S COLLEGE, MEERUT

Unit-I, Chapter-4

Dear Students,

We will start our chapter-4 of Unit-I i.e. **Recent Trends in Educational Technology.**

Recent Trends in Educational Technology

What is Educational Technology?

The Association for Educational Communications and Technology (AECT) defines educational technology as *“the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources.”*

Interestingly, Edtech is not a recent phenomenon. Rather its roots can be traced back to the 1960s when audio-visual tools were introduced for better communication and knowledge retention. Innovations in education technology have taken the teacher-student community by storm. Edtech personals are looking for ways in which technology can be leveraged to build better teaching-learning products.

Society functions much differently than it did prior to the advent of the digital revolution. New tools, ranging from social media to digital transaction management, have re-contoured the ways in which people interact. The digital age also notably influences how we learn. In fact, the classroom has become one of the most rapidly growing grounds for new technology.

Technology is rapidly changing the way we live and collaborate. Education is something that can change the world in positive way. Education technology can help to eliminate current barriers of providing quality education to all across the world. Here are, some of the key trends and technologies that can define trends for the coming year.

Trends in educational Technology

Modern technology has seeped into the classrooms and redefined the entire teaching and learning process. Industry experts view this marriage between education and technology to be a positive step towards better student engagement, resource management, and financial planning of institutions.

The seamless peer to peer collaboration will eventually lead to a redefinition of culture as an amalgamation of better social learning experiences. It will further investments in cloud technology, biometrics, and open source learning methods.

1. Artificial Intelligence (AI)

As we move towards a more connected world, the use of AI as one of a major trends in educational technology. The role of AI in the education sector is no longer limited to aspects like speech recognition, problem-solving, and planning. Rather AI facilitates automation of administrative tasks like students' grading, the addition of smart content in the curriculum, and personalization of the teaching process.

2. Virtual Reality (VR) in Education

The high adoption of VR in education is partly due to the rise in demand for experiential learning. By taking the learning process beyond the classrooms, VR has facilitated the growing trend towards independent learning route. With this method, students complete courses at home using online content, including videos of instructors in front of an actual class. Another benefit of virtual education is that teachers can utilize video conferencing and social media technologies, as well as a variety of subject-matter experts to convey information and check for understanding.

Virtual reality is popular in gaming. Concept of VR is becoming cost effective. Many other sectors have started using VR for many critical things. The use of VR in Education has also started. Consider the analysis of information retention. When it comes to classroom based lectures, Knowledge retention is lowest. In case of audio/ video/ visuals, knowledge retention improves drastically. There is science behind it, when user mind is able to see something in action its retention is better. VR not only provides opportunity to see something but also experience something.

Usually user needs to wear 3D glass and experience something as if person is standing in front of that event/ scene etc. Virtual Reality help to get 360 degree view of the surrounding. Such technology can help students to understand particular topic easily. Complex concepts and things

can be taught using Virtual Reality. Traditional lectures has lowest knowledge retention rate whereas technology like VR can increase knowledge retention to significant level.

3. Gamification

The complex pedagogical situations and challenges in the teaching process have triggered the need for a better synchronization of the teaching process. Gamification helps to reach an optimal mixed strategy which will enable tutors to choose the best possible action in a given situation.

The Adoption of gamification is perhaps one of the biggest trends in educational technology that turns the learning process a lot more fun and engaging. By adding game elements and bringing video game designs into the learning process, this Edtech trend improves the concentration level of the students. The higher education segment is also gearing up to adopt this technology to enhance the learning experience of the students. It will be interesting to observe how this Edtech will change the face of pedagogy in the forthcoming years.

4. Online Education

Number of internet users is increasing rapidly with increase in Smartphone. It has provided good opportunity to deliver education online. Online education is slowly and surely becoming popular with interest from working professionals to learn new things, technology. More number of organizations like Byju is emerging to target online education.

Around 28 Crore students are going to be enrolled to schools by 2021. More than 75 Crore Indians would be using internet (second Highest behind China)

Coming year would see increase in online education and its aligned services. Online education is useful to remove barrier of classroom based learning. Students can easily revise key subject/ topics. Internet penetration in rural India is increasing as we move forward. Mobile app based services like Whats App, YouTube are becoming popular.

There is scarcity of quality teachers in rural India. Rural students are looking forward to consume digital education in the form of videos, documents. Higher education is also slowly adopting the digital era. Online certifications, value added certifications are becoming popular in the college going students. Most of such courses are targeted to improve employability of the students. More such courses can help to make online education popular in India.

5. Digital and Comprehensive Online Assessments

Evaluation of students is one of the key areas of academic curriculum. Success of education largely depends on type of evaluation done. Evaluation of the students has largely been focused on analysis of theoretical knowledge of the student. Students usually write theory answers in the exams and it is being evaluated by one of the evaluator.

Limitations of current Assessment or Evaluation of students

- Evaluation is human dependent
- It is biased and not standardized for all students
- It is prone to error
- It does not take into consideration practical aspects of the knowledge

In the coming years there would be more focus on evaluation of student for practical knowledge of particular topic. Proportion of theory exams would be reduced.

(a) Artificial Intelligence Driven Assessments

AI driven assessments, personalized assessment of the students can be done using online examination systems. Such systems can provide useful insight of the student performance, group analysis and individual analysis for each topic / sub topic.

As assessment of the student is done using online tools and techniques, bias associated with manual evaluation can be eliminated. Assessment tools usually focused on evaluating practicality of the subject rather than theory knowledge of the student.

Online examination system like Eklavya.in provides subjective exam assessment as well. Students can write their answers using online editor provided, for each question or exam there is timer. Students are not allowed to switch to other applications during active online exam.

There is facility of auto authentication of the student using photo capture facility . Online examination system can also monitor student using video streaming. For objective exams results are instantly provided. It eliminates barrier of manual evaluation of the student performance.

In the coming year assessment of the knowledge would be based on new factors

- Practical Implementation
- Ability of innovation
- Problem Solving using knowledge
- Conceptual Application of the knowledge

Digital assessment can help unbiased and error free analysis of individual performance. It would be able to provide personalized feedback for the individual. Such feedback would be able to set right path for the student progress in terms of knowledge acquisition.

6. Blockchain chain Technology

Blockchain is emerging technology. It is going to dominate innovation across many businesses in the coming decade. Many articles are written about Block-chain technology. It is useful when there is need of collaboration, distributed database/ information. Block-chain is useful for many areas of education including examination management, student credentials verification, certificates verification etc.

(a) Maintaining Student Academic Records

In the current scenario, mark sheet of the individual students are maintained by respective universities. There is no way where any third party authority, employer can validate if marks or degree obtained by the student is valid and as per records of the university. Process of verification has to be done manually.

Blockchain technology can help to eliminate such issues where information collaboration, validation can help to validate credentials of the student degree or marks obtained. Coming year would see more new concepts and ideas of collaboration oriented processes in Blockchain for education sector.

(b) Storage of certificates of the students

Blockchain technology can also help to store digital copies of the student certificates in the distributed and collaborated environment. Each university can act as node or validator where any authority can validate student documents by requesting for verified information of the students. Such collaborative approach can help solve many issues like lost of original degree certificates or mark sheets, authentication of student education records etc.

7. Personalized Learning

Traditional classroom based learning is becoming obsolete. Education delivery or learning process must be personalized. Traditional classroom based lecture process may not help each individuals. Every individual has some strength and weakness and pace of understanding particular topic is different for everyone. It also depends on individual students liking for particular subject or topic. Personalized learning using technology is one of the trend that would dominate in the coming year.

Advantages of personalized Learning

Ability to absorb topic and understanding increases due to personalized learning

Personalized learning can help student to learn, understand topics as per individual speed

It can be done from any location

It is classroom independent.

8. AI based Personalized Analysis of Individual

Artificial Intelligence (AI) is latest buzzword in the world today. Not only technology sector but all sectors including finance, manufacturing and healthcare are going to be revolutionized due to implementation of Artificial Intelligence Education sector is also likely to get more ideas, implementations using Artificial Intelligence.

AI can help providing detailed analysis of student performance in the examinations. Feedback from teachers (human) has some limitations in terms of ability to comprehend student performance while taking into considerations historical performance.

Personalized learning and analysis of the learning is possible using AI driven assessments of the students.

9. Revolution in Exam Management

Exams are still conducted in traditional manner with exam centers, exam invigilation; answer sheet evaluation etc. AI can bring lot of changes in current exam management. AI based proctoring or auto remote proctoring can enable institutions to conduct exam without any need of infrastructure or logistic.

Remote Proctoring technology can enable students appearing for exam sitting at any location. System can track, monitor remote user using advanced video, image, audio streaming with intelligence to do analysis if student is appearing for the exam in fair manner.

Currently **Remote Proctoring to Invigilate Online Exams** has been successfully adopted and implemented by higher education institutes and universities for conducting entrance exams. It has helped them to remove infrastructure requirements and huge administrative cost of managing such exams. Artificial Intelligence based Remote Proctoring is going to be in demand in the coming days.

10. Privacy for students

Cyber-security and digital privacy rank among the top concerns of all consumers, including consumers of education. As a result, there is a large market for improving the efficacy of existing products and creating new ones that will help manage student data and protect the privacy of these young individuals.

11. Flipped learning

A new approach to education is called “flipped learning,” and as the name suggests, it involves turning traditional teaching methods upside down. In a “flipped” classroom, students take advantage of new technologies to absorb content at home through videos and other digital content and then complete their “homework” at school in small groups under the teacher’s supervision.

12. Digital Course Materials

The newest report from the National Association of College Stores highlights the rising spend on technology by schools and colleges. This trend has directly affected the sales of textbooks and course materials, as students prefer spending on the digital course materials. With Smartphone and high penetration of internet, assignments too have gone digital in nature.

The very premise of educational technology is incomplete without digital content, thus advances in designing of the digital content are sure to have a positive impact on the future of education.

As students spend more and more time online, there is a growing need for a curriculum that teaches digital literacy — systems to help students harness the technological tools at their disposal. This includes developing guidelines for how to interact with others (for more than social and entertainment purposes) and how to process information they encounter online.

13. New utility for wearable technology

Wearable technology can help keep kids safe. Not only can these devices track the locations of students at school, but they can also monitor the whereabouts of campus visitors. These items can even facilitate paperless transactions in the cafeteria, thus reducing waste, and quite possibly, bullying and theft.

References

www.blog.technavio.com

www.blog.epravesh.com

www.oasis.col.org

www.medium.com